DOCUMENT RESUME

ED 453 336 UD 034 211

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TITLE	New Teachers for a New Century: Recommendations from a National Invitational Conference (Racine, Wisconsin, November 17-19, 1999).
INSTITUTION	National Research Center on Education in the Inner Cities, Philadelphia, PA.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	2000-02-00
NOTE	29p.; Theme issue. Conference cosponsored by the Johnson Foundation and the Laboratory for Student Success, Temple University Center for Research in Human Development and Education.
AVAILABLE FROM	CEIC, Temple University Center for Research in Human Development and Education, 1301 Cecil B. Moore Avenue, Philadelphia, PA 19122-6091. Tel: 215-204-3000. For full text: http://www.temple.edu/LSS/pubsz/htm.
PUB TYPE	Collected Works - Proceedings (021) -- Collected Works - Serials (022)
JOURNAL CIT	CEIC Review; v9 n1 Feb 2000
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	Beginning Teacher Induction; Diversity (Student); Educational Policy; *Educational Quality; Educational Research; Elementary Secondary Education; Higher Education; Inservice Teacher Education; Minority Groups; Poverty; Preservice Teacher Education; *Teacher Certification; *Teacher Effectiveness; Teacher Recruitment; Teachers; Teaching Methods; Unions; Urban Education
IDENTIFIERS	Teach for America

ABSTRACT

This collection of papers includes: "New Teachers for a New Century: Recommendations from a National Invitational Conference" (Margaret C. Wang and Herbert J. Walberg); "Teacher Quality, Teacher Effectiveness: Basing Education Policy on the Facts" (Arthur E. Wise); "Accreditation Reform and the Preparation of Teachers for a New Century" (Frank B. Murray); "The Union's Role in Ensuring Teacher Quality" (Sandra Feldman); "A Commitment to Quality: NEA's Efforts To Improve Teaching in America" (Bob Chase); "Teaching Perspectives of Exemplary Teachers" (Edna M.J. Littlewood); "The Teachers We Need and How To Get More of Them: A Manifesto" (Chester E. Finn, Jr. and Marci Kanstoroom); "Regulation Versus Markets: The Case for Greater Flexibility in the Market for Public School Teachers" (Michael Podgursky); "Ten Years of Teach For America: Our Record and Learning" (Wendy Kopp); "Generic Aspects of Effective Teaching" (Jere Brophy); "Promising New Instructional Practices" (Phyllis Blumenfeld, Joseph S. Krajcik, Ronald W. Mars, and Elliot Soloway); "Getting To Highest-Priority Outcomes: Designing Urban Preparation Programs for all Teacher Candidates" (Victoria Chou and Mary Bay); and "Quality Teachers Through Regional Collaboration" (Diana Wyllie Rigden). (SM)

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ED 453 336

The National Center on Education in the Inner Cities

The CEIC REVIEW

A catalyst for merging research, policy, and practice.

Volume 9 • Number 1 • February 2000

New Teachers for a New Century

Recommendations from a National Invitational Conference

Margaret C. Wang, Distinguished Professor and Director, Temple University Center for Research in Human Development and Education, and Herbert J. Walberg, Research Professor, University of Illinois at Chicago

Although some fear that there will be insufficient numbers of teachers in the next decade, the most serious problem may be the preparedness and quality of the present and prospective teaching force. This potential problem led to the national invitational conference "New Teachers for a New Century" cosponsored by the Johnson Foundation and the Laboratory for Student Success (LSS) at Temple University Center for Research in Human Development and Education, held on November 17-19, 1999 at Wingspread, the Foundation's conference center in Racine, Wisconsin.

Represented at the conference were deans of colleges of education, the national teachers' unions, national licensing and credentialing organizations, principals, superintendents, teachers, policymakers, and other interested parties. The conference provided the opportunity for a national dialogue on how teachers are presently being prepared and how they can be better prepared, and a venue for discussing the most promising prospects for improving the quality of the teaching force.

The conveners chose participants with differing views to elicit opposing opinions. They nonetheless hoped that new recommendations would emerge from the clash of ideas. A set of commissioned papers, which are summarized in this *Review*, will be published as a book. They served as the basis of discussion, most of which was held in small working groups devoted to formulating next-steps and long-term recommendations. The discussion was lively but respectful as opposing viewpoints were heard. It yielded fresh insights and thoughtful and thought-provoking dialogue among those seeking to improve how the children of the 21st century will be taught.

The conveners expected consensus on some points, such as improving the teaching force, but sharp differences on others, such as how to do it. Unexpectedly, however, a substantial consensus developed on a number of points. Summarized below, they fall naturally into three categories: recruitment, education, and retention.

Recruitment: Teachers of the Future

The conferees generally agreed that multiple entry points and programs should be available to attract outstanding teachers into the profession. The commissioned papers and subsequent discussion called for a wide variety of recruiting procedures including conventional ones, data-driven accreditation and licensing, interviews with high-achieving high schoolers with a desire to teach, and simplified hiring and entry procedures.

It was also generally agreed that, as part of program approval from both the traditional and alternate routes, university programs should provide evidence that students they graduate have learned what they were taught. Teachers-to-be also need to know the practicalities of current curricula and best practices.

The following further specific recommendations were made:

- Convene focus groups to explore incentives and disincentives for teaching as a career.
- Provide different approaches and support systems for those

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entering the field through multiple paths including those entering later in life.

- Provide incentives, even salary differentials, to spread master teachers across school districts.
- Select more academically able and otherwise promising teacher candidates.
- Provide early field experiences to expose candidates to the challenges of the classroom.
- Recruit teacher candidates into fields with shortages such as mathematics and science.
- Recruit competent individuals with subject matter expertise and demonstrated competency from firms and not-for-profit organizations to serve as part-time teachers for hard-to-fill positions.

Teacher Education: The Importance of Preparedness

How can teacher preparation and in-service professional development be improved? What is the relative importance of content knowledge and pedagogical preparation? Obviously, it is difficult to teach what you do not know. But it may be nearly as difficult if you lack teaching skills. In any case, the weight of the evidence suggests that content knowledge better predicts what students learn than does lack of much pedagogical training and teaching experience.

- The educators of teachers should compile and synthesize what is known about effective teaching practices and communicate this knowledge to their colleagues, teachers, and the public.
- Criteria for teacher preparation and assessment need to be articulated and made public.
- Policies and allocation of resources in states should reinforce the shared responsibility of colleges, universities, school districts, and others in the preparation and continuing professional development of teachers.
- Prospective and current principals should be encouraged to create collaborative teaching-learning environments that positively promote student achievement.
- Start clinical experiences earlier, and encourage candidates to be reflective and responsive to the challenges of the classroom.
- Team up intern teachers with master teachers and mentors.
- Concentrate evaluation of new teachers in their first year of teaching.
- Avoid "emergency" licenses.
- Concentrate teacher education on the full range of students from prekindergarten through age 20.
- Develop teacher preparation and continuing professional development collaboratively among institutions of higher education, state departments of education, and school districts (including building level personnel).
- Expand the role of technology to: develop and coordinate state/district/higher education plans for student learning and teacher/faculty development throughout the continuum from prekindergarten through age 20; and synthesize information about curriculum and student learning.
- Develop multiple measures of assessment including a reliable system to link teacher performance and student learning.
- Evaluate whether various teacher preparation routes are effective in general and disseminating information about advances in the field in particular.
- Establish models of "team" teaching comprised of differentiated master and novice teachers sharing responsibility for planning, analysis, and instruction.

In addition, several recommendations were made regarding the need for data to support reliable decision-making and accountability:

- Develop and implement methods, emphasizing student achievement gains, to remove ineffective teachers from the school systems and to remove unsatisfactory candidates from teacher education programs.
- Require multiple assessment measures and standards-based accountability.
- Develop licensure processes that include multiple evaluators.
- Employ evaluations at key points along the professional continuum including the following stages: pre-internship, internship, initial licensure, professional licensure, and professional mastery/ National Board Certification.
- Link teacher performance to student performance using "value added" gain scores.
- Offer a guarantee that beginning teachers prepared by an agency or institution will be raised to standard by that agency/institution if the employing district is unsatisfied.

Retention: Helping Good Teachers Continue

A recent study suggests that only one in five teachers feels

"very well prepared" to work in the classroom. As many as two thirds of beginning teachers, moreover, leave teaching within a decade. How can the best be retained? The following specific recommendations were also proposed:

- Expand the roles and responsibilities for some teachers, for example, in serving as mentors or cooperating teachers, and provide for differential pay.
- Offer classroom management training programs, including e-mail or other electronic programs for quick response.
- Because the professional culture in schools and the degree of support teachers receive strongly affect teacher retention, every school should have a clear commitment to a mission statement, a collaborative strategy for accomplishing it, and be held accountable for the results.
- Provide data on why teachers do/do not stay in the profession.
- Focus on hiring quality teachers, not just filling vacancies.
- Implement procedures to reduce teacher-to-student ratios with lower class size and use of aides and interns. ⌘

Teacher Quality, Teacher Effectiveness:

Basing Education Policy on the Facts

Arthur E. Wise, National Council for the Accreditation of Teacher Education

Given that the 21st century will demand more of teachers, continuous reform of teacher preparation is imperative. Careful planning for the future, however, requires that we understand the pertinent facts. Unfortunately, teacher preparation policy is often designed based on myths. Some of these myths may have been partially true in the past, but teacher preparation has changed drastically over the last 20 years. Following is a list of some of the most popular myths about teacher preparation, along with today's facts.

Myth: Teacher candidates study low-level content courses. A recent op-ed in the New York Times said that teachers do not take the same courses in such disciplines as English, math, and history as other college students.

Fact: Teachers take the same courses in these disciplines as students who major in the arts and sciences. Indeed, colleges no longer have other disciplinary courses for them to take. Many institutions and states require prospective teachers to major in a subject matter. Emily Feistritzer's recent survey of teacher preparation programs across the nation indicates that 62% of teacher preparation programs require a major or the equivalent of a major in the subject area of the license, and that 26% of programs require at least a minor or its equivalent in the subject area of the license.

Myth: Teacher candidates spend most of the their time on education courses and do not fully learn the content of their fields.

Fact: Middle school and high school teacher candidates spend most of their time in coursework in the arts and sciences. Again, Feistritzer's study confirms this. In undergraduate teacher preparation programs, students are required to take 51-52 credit hours in general studies (history, English, mathematics, etc.), and 36-39 hours in their major or its equivalent. In terms of the school of education, 24-31 hours of professional studies are required, along with 14-16 hours of clinical experience.

Prospective high school and middle school teachers dedicate between two thirds and three quarters of their college careers to courses in their majors or in general liberal arts. Those who believe that future teachers study education and not content are simply misinformed.

Myth: Education courses are worthless. The candidate does not learn anything useful. Education courses are for students who cannot succeed in the arts and sciences.

Fact: Although this may have been the case 20 or 30 years ago, times have changed and education courses have been reformed. Accreditation in the 1980s required schools of education to identify a knowledge base for each program of study that faculty and candidates alike could articulate. Teacher candidates today are expected to explain why they select a particular instructional strategy with a group or individual, based on research and best practice. The past 20 years have brought new knowledge of how to teach specific disciplines.

In addition, the National Research Council has just published a study that elucidates three key findings for teaching and teacher preparation:

1. the teacher must be able to draw out preconceptions that the students bring with them

*(see **Teacher Quality** on p. 26)*

Accreditation Reform and the Preparation of Teachers for a New Century

Frank B. Murray, University of Delaware College of Education

Innovative, dialectical teaching—involving spontaneous interactions between teachers and students—is sought by many standards commissions and reform groups. This sort of teaching, however, is at risk because it is difficult to capture the inherently unpredictable fruits of such classroom discussions on standardized tests. If standardized tests are the measures that matter in an accountability system, few teachers will risk intellectual detours, no matter how valuable they might prove. As a result, reforms may be set back by the very instruments and policies that were meant to advance them.

What, then, is the answer? The National Commission of Teaching for America's Future (NCTAF) proposes a limited but ambitious set of actions to reach the goal of competent, caring, and qualified teachers for all the nation's students; the Teacher Education Accreditation Council (TEAC) has proposed an alternative solution to remedy education's weaknesses, particularly those in teacher education accreditation. This paper discusses the two proposals, as well as the crisis in confidence in teacher education programs they seek to address.

The Teacher Education Academic Degree

There has been a steady erosion of the value of academic degrees in teacher education and in the status of the colleges and schools that grant them. Since *A Nation at Risk* (1983), there have been sustained and concerted efforts to reform and improve American teacher education. Despite this prolonged effort, however, the members of NCTAF concluded in 1996 that the country was still not serious about standards for its teachers and that the nation's teacher education programs needed to be reinvented.

The common view is that knowledge of subject matter, in the company of the natural human tendency to teach, outfits a person as a teacher, especially in situations where the teacher and the pupil are similar. This view presents a number of problems for contemporary schools, where schooling now takes place on a relatively large scale and, increasingly, in circumstances where teachers and pupils are not alike. Teachers not only need to know about the findings in a maturing literature on issues of diversity, but they must extensively practice some counterintuitive and "unnatural" teaching techniques if they are to avoid a predictable number of crippling pedagogical mistakes. The teacher education degree, however, has rarely been held in high regard for its treatment of these topics. At the same time, the common view cannot be the answer to the problems NCTAF has identified either.

The NCTAF Proposal for Improving Teacher Education and Quality

According to NCTAF, an academic degree in teacher education is one important factor in reaching its goal of competent, caring, and qualified teachers for all U.S. students. NCTAF's goal is for the next generation of teachers to meet a set of mutually reinforcing standards in three domains: the state's teaching license, the accreditation of the school of education, and the certification of advanced teaching proficiency.

Some aspects of NCTAF's limited proposal may prove problematic, however, as there are several other factors that could reinforce and support the teacher education program and help shape it. Important corroborating information from other indicators about teacher quality may be overlooked; the critical requirement of measurement independence may be compromised if the standards and the agencies that undertake the evaluations are not independent of each other; and the field has not developed a sufficient knowledge base for the NCTAF solution.

The system of teacher quality employed in the United States rarely secures evidence about quality or operates with the evidence necessary to support the judgements and assurances it attempts—unconvincingly—to provide about the quality of teachers and teaching. The system for determining teacher quality should require solid evidence that a teacher possesses adequate knowledge of the liberal arts, the subject matters that will be taught, and pedagogy and its attendant skills and dispositions. Currently, we only know that students have met faculty's expectations in their study of teacher education. (Accrediting agencies typically ask only whether an institution has the capacity to deliver its programs, not if it does; similarly, states often avoid direct evidence about individual students and automatically grant state teaching licenses to all graduates of approved programs or to all individuals who complete

a state-prescribed set of academic courses.)

There are attempts to seek evidence of teachers' competence later in their careers—standards boards may grant certificates to master teachers, for example—but there is currently no evidence of the validity of these assessments either.

A New Form of Accreditation: Standards Versus Evidence for Claims

NCTAF's proposal is based on standards that are under development and not yet validated; it is built, then, on the consensus of well-intentioned professional educators. An education school could therefore meet National Council for Accreditation of Teacher Education (NCATE) standards, for example, and still not know if students had mastered critical knowledge and skills, if the faculty's assessment system was valid, or if faculty based their decisions on a quality-control system capable of locating program weaknesses.

TEAC's proposal addresses the teacher education faculty's quality-control system and the evidence that this system yields about teacher education degree programs. It requires solid and convincing evidence about whether program graduates have acquired the knowledge, disposition, and skills their academic degrees indicate. The approach advocated by TEAC applies to all elements in the nation's quality-assurance system—each of these elements should base its determinations on evidence as well.

Two Accrediting Agencies: Value in a Dual Approach

TEAC and NCATE base their approaches on differing analyses of what best serves the institution, the profession, and the public; they do not represent mutually exclusive approaches, as the results of one will inform the other. NCATE standards are compatible and consistent with TEAC's framework and standards. The TEAC accreditation process would evaluate and audit program faculty's evidence that they have met NCATE standards (or, alternatively, other standards that have the goal of preparing competent, caring, and qualified teachers).

Some states have required recently that the state program approval process be based on NCATE rather than the traditional National Association of State Directors of Teacher Education and Certification (NASDTEC) standards. This requirement is not, in and of itself, an obstacle to accreditation by a system, like TEAC's, that audits and evaluates evidence that standards adopted by an institution have been met.

The Success of the New System of Accreditation

It is perhaps unrealistic, although correct, to say that TEAC will have succeeded when the public has confidence in its educators and their education. TEAC is not competing with NCATE, nor is it battling for a share of the "accreditation market."

TEAC's struggle, in a sense, is the same as NCATE's: to create a market and to convince institutions that accreditation by audit and evidence will assist them and benefit the teaching profession. (For a variety of reasons, the majority of education schools are not accredited—some institutions perhaps feel that they could not meet current NCATE standards, while others believe that NCATE accreditation would confer few tangible benefits, for example.)

A Strategy to Stem the Erosion of the Teacher Education Degree

One reason for the lack of confidence in the teacher education degree is that the profession has not grounded its work in scholarly evidence. The public's confidence in the quality of its professional educators must rest on multiple and converging lines of evidence about the quality of individuals who wish to teach. TEAC's system centers on the academic degree program and on an institution's system for verifying its claims about itself and its students. Other lines of evidence must come from independent assessments of different aspects of a prospective educator's competence.

There must be solid evidence, grounded in the professional literature, to warrant the granting of degrees, licenses, certificates, professional positions, tenure, merit payments, promotions, and awards.

Politics in Education

Although one might have thought that NCTAF members and other reform-minded teacher educators would have viewed TEAC as a welcome partner in the endeavor to accredit all education schools, this has not been the reality. The fact that this new system is so single-mindedly and passionately opposed, often by individuals who have had no opportunity to understand it, indicates that the merits of alternative systems are subservient to a political agenda that does not have the confidence to trust the evidence.

TEAC's accreditation decisions are grounded in solid evidence that students in a teacher education program have learned what was expected of them, that there is a valid system to measure learning, and that the program has a sound quality-control system in place that addresses all aspects of the evidence for the quality of the program. Institutions and the public would each profit from this new approach. ⌘

The Union's Role in Ensuring Teacher Quality

Sandra Feldman, American Federation of Teachers

Ensuring that there is an excellent teacher in every child's classroom is today's clarion call. Everyone agrees that it is crucial to improve teacher quality for public education, our nation, and our children, but there is considerable controversy over how to best accomplish this goal.

Teaching requires specialized knowledge—a deep understanding of academic disciplines and the knowledge of how to teach this subject matter to children. It is essential to make changes in policy and practice that will enable teachers and their students to deal effectively with an increasingly challenging environment. How, though, do we ensure that proposals for improving teacher quality take us where we want to go? How do we ensure that every U.S. public school and classroom will have the highest quality teachers?

The American Federation of Teachers (AFT) believes that we reach these goals by insisting that teaching be treated as a profession—and by admitting that many of the fundamental aspects of a profession are not yet found in the field of teaching. We must address the current problems of teacher development and demand a better system—one that ensures that teachers know content as well as pedagogy. The union must work to achieve education and training for prospective teachers; high and rigorous standards for entry into the profession; appropriate compensation for teachers who meet professional standards; rewards for the best teaching; high-quality professional development programs; programs that exclude from the profession any weak teachers who cannot make the grade after adequate professional development; and responsible policies and research-based programs to enhance teacher quality.

Improving Preservice Training: Entry into Teacher Education

If teacher education is to be improved rather than eliminated, students must receive research-based pedagogy courses and deep content knowledge as well as rigorous clinical training. We must agree within the profession on the core knowledge that all teachers must possess.

Teacher education programs generally require only that students pass a basic literacy test and have a 2.5 GPA in their freshman and sophomore years. This isn't enough. Absent any external national standards, it is difficult to tell what a particular GPA indicates; completion of two years of general education does not necessarily mean that a student has mastered basic literacy skills. For this reason, virtually three quarters of the states require demonstration of such skills on a pre-entry test. Unfortunately, many of these tests are not particularly rigorous.

No student should enter a teacher education program without having a broad, rigorous, and coherent background in college-level arts and sciences; courses should be relevant to state education standards. Students should have at least a 2.75 GPA, and should be assessed for entry into teacher education based on college-level work, not solely basic literacy.

Shared Body of Knowledge: Pedagogy

In teaching, there is no agreement about the knowledge and skills that teachers must possess and therefore no core program that defines and unites teacher education. Such a core program is characteristic of every other profession. It is imperative that the teaching profession (1) determine a core body of knowledge and skills that prospective teachers must master and (2) develop a core educational program. Although it will not be easy, it is essential that we forge a consensus in the various areas of professional training to produce the quality teachers our children need.

Shared Body of Knowledge: Subject Matter

The AFT believes that teachers need a solid grounding in liberal arts, as well as a shared body of pedagogical knowledge and a deep education in the subjects they will teach. A four-year undergraduate program is not adequate to educate students in all these areas, plus provide a rich clinical experience.

There is growing concern, for example, that there is not enough emphasis on subject-matter knowledge for teachers in their education, licensure, and professional development. This is especially true for elementary teachers. This cannot be allowed—teachers cannot teach what they do not know well.

Clinical Training

Teachers are generally positive about their student-teaching experience, but it is well documented that this "clinical experience" is too short, has too few selection standards for cooperating teachers, and is inadequately supervised. In a survey of higher education and a review of the literature on this issue, the AFT found that there are some programs that carefully select and train cooperating teachers. However, only a small percentage of teacher candidates have access to these programs. The large majority of clinical programs are

underfunded and indifferent to whether cooperating teachers are excellent and whether there is coordination among university faculty, supervisors, and cooperating teachers.

Real partnerships between teacher education and school districts are needed to determine standards and processes for clinical training and induction, and to ensure the involvement of expert, practicing teachers as mentors and college faculty.

Licensing Standards

Each state sets its own standards for teacher preservice preparation and licensure; usually, these are not very high. Without a common, agreed-upon core of what teachers must know and be able to do, it is not surprising that licensure and accreditation requirements vary considerably.

Until the late 1980s, teacher licensure was based almost entirely on the number of credits teacher candidates took in required subject areas. States now also require prospective teachers to take an examination to demonstrate content mastery. These examinations unfortunately do not ensure that an individual has a deep knowledge of pedagogical content or a given subject matter—and even these low-level entry standards are frequently waived by districts frantically seeking to hire staff.

The AFT believes it is the union's responsibility to work with licensing bodies and professional standards boards to require that all entering teachers are knowledgeable about their discipline, how students learn, and the arts and sciences. These high standards should be measured by valid and reliable assessments.

Creating Induction Programs

The AFT believes that the union must work through the collective bargaining process to develop programs that promote and ensure teacher quality. We must develop peer-assistance programs that provide mentors for new teachers and internship programs that enable master teachers to assist and review new teachers.

Mentors must be excellent teachers. They should be selected and trained through a rigorous process agreed upon by the union and the local school district with input from the university, and must be compensated appropriately for their work. The widespread adoption of peer intervention programs would help weak teachers gain necessary skills or counseling about other lines of work. It would also raise the status of the profession and help reverse a public misperception that the union—through its advocacy of due process and a fair dismissal system—works to protect incompetent teachers. It would also help retain beginning teachers. Today 20% to 50% in urban areas leave in the first five years of teaching.

Professional Development

The AFT recognizes that teachers need access to research-based knowledge to guide and improve professional practice. We have been active in making professional development an integral part of union work. In 1981, for example, the AFT developed Educational Research and Dissemination as a model for union-sponsored professional development. Educators and researchers translate empirically tested educational knowledge into user-friendly instructional strategies that teachers and paraprofessionals can employ in their classrooms.

Support for the National Board for Professional Teaching Standards

The voluntary National Board Certification (NBC) process is a year-long, performance-based assessment of a candidate's instructional practice measured against rigorous standards for experienced teachers. NBC standards articulate a broad professional consensus on the knowledge, skills, and accomplishments that define excellent teaching. The AFT recognizes the value of the NBC process, and is working with education stakeholders to encourage and support experienced teachers who seek this advanced credential.

Tenure and Quality

For the education system to be effective, all teachers need a fair dismissal process—one that protects them from capricious, political, or otherwise intemperate firing. Tenure laws do not guarantee lifetime employment; they are designed to protect teachers from arbitrary dismissal without just cause or due process. Protecting tenure and ensuring high standards of teacher quality are not mutually exclusive union activities. Peer-assistance and review programs—which allow teachers in trouble to be evaluated by people with expertise in their teaching field, to get help, and to be observed over time—benefit teachers and the public by reducing the incidence of tenure cases through successful interventions or counseling.

The Bottom Line in Ensuring Quality

When high standards are important at every point in a teacher's career, when those high standards are not suspended in the face of teacher shortages, and when being an accomplished teacher is recognized and adequately rewarded, we will have achieved both teacher quality assurance and a vastly greater confidence that we are providing a quality education for all students. The AFT is committed to achieving this end. ⌘

A Commitment to Quality:
NEA's Efforts to Improve Teaching in America

Bob Chase, National Education Association

When I began teaching 34 years ago, administrators gave me a directory for the school district and a two-day orientation on administrative procedures. Then they said, "Okay. Go teach." That was it.

Today, little has changed for the majority of America's educators: professional development is haphazard at best, and new teachers are still thrown headfirst into the classroom and expected to learn. Yet the challenges facing teachers have increased exponentially over the past four decades. Unsurprisingly, a recent *New York Times* poll found that only 20% of teachers feel well prepared for the challenges of the modern classroom.

Clearly, educators are in desperate need of better preparation and ongoing professional development. The National Education Association (NEA) is, I believe, professionally obligated to fulfill this need. Studies show that teachers are the single most important determinant in the quality of a child's education; we must insist that all teachers are well prepared for the classroom and held to standards of excellence.

Believing that teachers' unions can no longer afford to defer to management or outside "experts" when it comes to professional development, NEA is embracing "new unionism." New unionism combines a craft guild's commitment to professional excellence with a traditional union's advocacy and labor concerns.

At the center of our new unionist agenda are three strategic priorities: teacher quality, student achievement, and school systems capacity. Although these three priorities are inherently linked, this paper will focus specifically on NEA's ongoing efforts to promote teacher quality.

Continuum of Teacher Development

At the core of NEA's activities is the "Continuum of Teacher Development." This is a blueprint designed to promote quality teaching throughout our members' careers. The continuum consists of three phases: (1) preservice preparation for future teachers, including recruitment, teacher education, and accreditation of schools of education; (2) extended clinical preparation for new teachers, which includes licensure and retention; and (3) continuing professional development for veteran teachers, including National Board Certification and ongoing pedagogical support.

NEA staff and members are engaged in various efforts to improve teacher quality in all three phases. The following is a detailed summary of these efforts.

Preservice Preparation

Recruitment. In the next decade, America will need an additional 2.2 million teachers. NEA is committed to expanding the pool of qualified teachers through an aggressive recruitment campaign that targets, in particular, students from diverse ethnic backgrounds, school paraprofessionals, and high-achieving students.

One of NEA's goals is to make the teaching force in public schools more ethnically diverse. To this end, NEA is collaborating with minority and education organizations. While competence, not background or gender, must be the defining criterion for hiring any teacher, NEA recognizes that excellence and diversity are not—and must not be—mutually exclusive.

Other important components in NEA's recruitment strategies are efforts directed towards paraprofessionals who already work in the nation's classrooms and the 50,000-member Student Program, which provides on-campus support for students aspiring to teach.

Teacher Education. The growing demand for higher standards and accountability in teaching has prompted NEA to address the issue of teacher preparation. In 1994, NEA launched the Teacher Education Initiative (TEI), a partnership forged among NEA, school districts, and schools of education to improve how future teachers are prepared for the classroom.

The "laboratories" for the TEI are the professional development schools (PDSs). In PDSs, future teachers are co-taught on-site, in their own schools, by experienced classroom practitioners and university faculty. Through such programs, future teachers receive a stronger curriculum base, extended clinical experiences, and continuous mentoring and support; a five-year longitudinal study has shown that the TEI produces more effective teachers.

Accreditation of Teacher Education. Teacher education programs in the United States are not required to achieve national accreditation—teachers can be licensed even if they graduate from nonaccredited schools.

It is our goal that every teacher hired in America be licensed by an accredited school of education. Thus, we have forged a partnership to promote accreditation and licensure with the National Council for the Accreditation of Teacher Education (NCATE), which autho-

rizes the professional accreditation of teacher education programs.

It is not enough, however, that an institution is accredited. Accreditation must be the hallmark of high standards and quality professional training. NEA is working with NCATE to ensure high standards at the nation's 500 accredited teacher education programs, as well as to increase the number of accredited institutions.

Extended Clinical Preparation

Licensure. To ensure teacher quality, we must insist on teacher licensure. With teacher shortages faced by an increasing number of schools, more teachers are now hired with emergency credentials or assigned to teach subjects outside their fields. NEA views these developments as obstacles to reform and threats to the profession.

There are no emergency licenses for doctors, lawyers, or accountants, nor for hairstylists, electricians, or manicurists. NEA—believing in the need for standards, licensing, and a system of quality control for teaching—promotes the establishment of independent professional standards boards throughout the country. These boards, comprised mostly of classroom practitioners, set standards for licensing teachers and administrators; issue, renew, and revoke licenses; and monitor the ethics and practices of education professionals.

Retention: Helping New Teachers. Keeping teachers in the profession is a great challenge. Twenty percent of all new hires leave teaching within three years. In urban districts, close to 50% of newcomers leave the profession during their first five years of teaching.

NEA believes that a one-year induction of new teachers should be mandatory and include a mentoring program. NEA also recognizes that it must challenge the widespread system of class assignments in which beginning teachers are given the most difficult students and classes, as well as the worst facilities.

In 1999, NEA launched a major initiative—Helping New Teachers Succeed—to reduce teacher attrition by providing teachers with the support they need during their first years in the classroom. NEA is also harnessing technology to help new teachers: it recently hosted a virtual conference for new teachers and offers Works4Me, practical tips for the classroom sent to members via e-mail each week.

Peer Assistance and Review. In peer assistance and review (PAR), mentor teachers provide sustained, intensive assistance to both new teachers and veteran teachers who are struggling in the classroom. Their assistance continues as long as there is progress—if there is no progress, the mentor counsels his or her peer about leaving the profession. If necessary, the mentor recommends dismissal to a joint union–district governing board.

Members increasingly see PAR as a means of promoting quality, support, and high standards within the teaching profession, much the way the American Bar Association ensures high standards for the legal profession. PAR also helps to retain new teachers.

Continuing Professional Development

National Board Certification. In 1987, the National Board for Professional Teaching Standards inaugurated National Board Certification (NBC), which provided American educators with a definitive set of teaching standards. The year-long candidacy and application process enhances teachers' skills and improves children's education.

NEA has made Board certification a top priority: we founded the Candidate Support Consortium to help our affiliates aid members seeking to earn NBC; this includes offering loans and easy repayment plans to members who want to participate in NBC.

Technology. Although some 60% of the jobs available at the beginning of the next century will require technology skills currently held by only 20% of the workforce, more than 50% of American schools remain in the "low-tech-readiness" category. Only 20% of teachers report feeling very well prepared to integrate education technology into classroom instruction.

Ensuring that the education system prepares students for a world increasingly dependent on technology will depend largely on the preparation of teachers. NEA wants teacher education accreditation standards to include the field of technology. Proficiency in the use of technology should be a requirement for teacher licensure and 40% of a school district's technology budget should be used for professional development.

Compensation. NEA recognizes that there is a direct relationship between paying teachers well and promoting quality education. In order to attract talent to the classroom, school districts must be ready, willing, and able to pay for it.

Policymakers must face an increasingly rude reality: low teacher pay comes at a very high cost. Currently, starting salaries for teachers are as low as $19,000 annually. The high attrition rate of new teachers is often due to the fact that they are lured by higher pay and prestige elsewhere.

As a result, most school districts are chronically short of qualified teachers. Nationwide, more than a quarter of newly hired teachers do not fully meet state licensing standards. Therefore, NEA remains committed to ensuring that our members are well paid.

*(see **A Commitment** on p. 27)*

Teaching Perspectives of Exemplary Teachers

Edna M. J. Littlewood, University of Illinois at Chicago

The potential of exemplary teachers to be a source of knowledge about teaching has long been recognized but remains virtually untapped. In our efforts to identify effective teaching practices and improve our capacity to provide quality education for all students, we must recognize that individual teachers, working with individual children, determine the curriculum that is taught and the effectiveness of a child's educational experience.

To gain a better understanding of the perspectives of exemplary teachers, this article outlines the results of a study exploring these teachers' views of their work. The study focuses on exemplary teachers' insights into their classroom practices, their satisfactions and dissatisfactions with teaching, the reasons they remain in teaching, and the life experiences that have contributed to their insights into teaching.

Eleven exemplary elementary school teachers participated in the study: six taught in the Chicago public schools, three in suburban public schools, one in a suburban Catholic parochial school, and one in a suburban Lutheran parochial school. Teachers' experience ranged from 12 to 33 years. Two teachers were African American, one was Asian American, two were born in Cuba, and one was born in Ireland. All participating teachers had received teaching-excellence awards from the Golden Apple Foundation, an Illinois nonprofit organization that selects excellent teachers for recogni.ion based on an exacting selection process.

The study was limited to female teachers because women comprise the majority of elementary school teachers. Data were gathered from teachers' written statements of their teaching insights and in-depth essays on teaching, semi-structured interviews regarding the factors that influenced the development of their insights, and videotapes of classroom interactions with students. This study makes these exemplary teachers' knowledge available to individuals other than their students.

Exemplary Women Teachers' Insights About Teaching

The categories that emerged from the exemplary teachers' descriptions of the insights that most influenced their teaching were related to children, curriculum and instruction, teachers, and parents. What emerged was a view of the teacher not as someone who bestowed knowledge, but as someone who interacted with students in the quest for knowledge.

The teaching insights of these exemplary teachers centered around the theme of learner-centered education. The teachers expressed the importance of student educational achievement, yet focused primarily on the students themselves in their insights, rather than on curriculum recommendations. They recognized the need to know and understand the children to allow their interactions with them to reflect their care and lead to willing participation and motivation to learn. The teachers' instructional insights also had a strong student focus. For example, they recognized the learning community and larger community as nurturing entities as well as sources of knowledge for students.

The teachers' insights indicated that they recognized parents as children's ongoing teachers, who provided consistency as a child moved from grade to grade. Teachers also recognized the importance of parents' care in positively affecting children's educational progress. At times, parental behavior led teachers to question whether all parents really cared about their children. One teacher developed the insight, however, that all parents care for their children regardless of appearances to the contrary. Her original image changed with compelling evidence as did her ways of interacting with the parent, substantiating findings that alternative teacher behavior comes with the development of alternative belief sets.

Teachers' descriptions of the sources of the significant insights that guide their teaching attest to the pervasive effects of their life experiences. They attributed insights to experiences ranging from childhood home, school, and community experiences to preservice teacher education and professional and career experiences. These findings substantiate the literature indicating that teacher thinking is shaped by what may be considered life-long teacher education and the view that teacher education incorporates the summation of experiences that influence a teacher's life.

The sources to which teachers attribute significant insights indicate the impact of experiential knowledge on teachers' individualized perspectives on teaching, substantiating the view that teachers are guided by experiential knowledge. Teachers' reflective evaluation of positive and negative experiences to extract meaning and teaching direction is evidenced by the nature of the insights that they developed. From their experiences, for example, they drew understandings of child life, of potentially effective ways of working with children, and of enriching the curriculum and extending it beyond the classroom.

The teachers reported drawing useful understandings that contrib-

uted positively to their teaching from both unhappy and positive childhood relationships and school experiences. A teacher's perception of being treated unfairly as a child in school because she couldn't sit quietly in class contributed to her resolve for fairness and equal treatment of her students, for instance. The understandings developed by the teachers' reflection on childhood experiences contributed to their view of teachers' supportive relationships with their students. This is in accord with findings that teachers found both positive and negative life experiences to potentially have positive effects on their professional lives.

Teachers' few references to teacher education as a source of significant teaching insights supports findings that teacher education is infrequently cited as an influence on teachers' pedagogical perceptions. In fostering a change in perspective from student to teacher, teacher education may serve more as a catalyst for thinking about teaching and less as a source of significant teaching insights.

Teachers in the study referred infrequently to colleagues as sources of significant insights. In most cases, they experienced the isolation from other teachers that is typical of teaching. The perception that collegial interaction regularly yields understandings about teaching may relate more to "teaching tips" than to in-depth, shared reflection on teaching.

The large number of teaching insights that were developed, revised, or reinforced by teachers during their teaching years indicates that they learned on the job; this supports the contention that engaging in teaching fosters a continual process in which professional knowledge and beliefs are revised and renewed.

The teachers in the study found satisfaction in their work. They liked children, enjoyed working with them, and believed that their work mattered in a child's life now and in the future. The teachers found inherent satisfaction in teaching children and seeing them enjoy learning and achieve success, particularly when they overcame difficult obstacles to do so.

Their motivations for remaining in teaching were based on their commitment to children, their firm belief in the importance of education for their students, and the enjoyment they gained from learning and teaching.

Teachers' dissatisfactions and concerns were related to perceived impediments to students' achievement of their educational potential. Concerns about the attitudes or actions of some parents were related to their possible detrimental effect on children's learning or general welfare, for example. Teachers were also concerned about having enough time to teach all that they felt it was important to teach, which led to their dissatisfaction with disruptions during the school day, or with bureaucratic restrictions on their structuring of class time.

Other sources of dissatisfaction mentioned by teachers—including professional isolation, lack of funding, and top-down curriculum directives—were related to possible constraints on teachers' ability to provide for the education of their students. When necessary, teachers used creative solutions to overcome the institutional constraints they felt might diminish their teaching effectiveness.

Conclusion

Examining outstanding teachers' insights about teaching, and the experiences that helped shape their understanding of teaching, suggests possibilities to be considered to promote teacher effectiveness. For instance, teachers have few opportunities for collegial interaction around educational issues of interest or concern. According to researchers, teachers may discuss managerial concerns regarding skill acquisition but rarely talk about the process of learning or teaching practice. Interacting with other teachers who are familiar with the realities of teaching could let teachers see issues in a new light. The expertise of teachers working together as professional colleagues has the potential to promote the improvement of teaching.

To broaden channels of communication among teachers by sharing ideas and teaching perspectives, in-service teachers and school administrators might work together to consider the following questions: How can the isolation of teachers be overcome to promote collegial interaction around issues of importance for the improvement of education in the school? What administrative supports would encourage and facilitate the process? What issues do the teachers feel they need to address? What form should the interactions take?

There are also possibilities to be considered for teacher education. The powerful impact of early life experiences on teacher thinking is evident from the insights of the teachers in this study. Understandings based on a spectrum of school and out-of-school childhood experiences were reported as being influential in the development of teachers' insights. More teaching insights were based on childhood experiences than were based on experiences during teacher education or classroom teaching.

To expect this early understanding to be abandoned rather than built on and refined by subsequent knowledge and experience defies conventional wisdom. Teacher educators should consider using potentially powerful early life experiences as they work to enable future teachers to better bridge the gap between their personal experiences and the theory and content of the teacher education curriculum.⌘

The Teachers We Need and How to Get More of Them:

A Manifesto*

Chester E. Finn, Jr. and Marci Kanstoroom, Thomas B. Fordham Foundation

U.S. schools aren't producing satisfactory results, and this problem is not likely to be solved until U.S. classrooms are filled with excellent teachers. About this, there seems to be a national consensus. How to get from here to there, however, is the subject of far less agreement. Our purpose is to suggest a more promising path than many policymakers and education reformers are presently following.

The good news is that America is beginning to adopt a powerful, common-sensical strategy for school reform. It is the same approach that almost every successful modern enterprise has adopted to boost performance and productivity: set high standards for results to be achieved, identify clear indicators to measure progress towards those results, and be flexible and pluralistic about the means for reaching those results. This "tight-loose" strategy is a fundamental aspect of the charter school movement, and undergirds many versions of "systemic reform" as well.

The bad news is that states and policymakers have turned away from this common-sensical approach when trying to increase the pool of well-qualified teachers. Instead of encouraging a results-oriented approach, many jurisdictions are demanding ever more regulation of inputs and processes. Other modern organizations have recognized that regulation of inputs and processes is ineffective and often destructive. There is no reason to believe that it will succeed as a strategy for addressing the teacher-quality problem.

We conclude that the regulatory strategy being pursued today to boost teacher quality is seriously flawed. Every additional requirement for prospective teachers will have a predictable and inexorable effect: it will limit the potential supply of teachers by narrowing the pipeline while having little or no bearing whatever on the quality or effectiveness of those in the pipeline. The regulatory approach is also bound, over time, to undermine the tight-loose strategy for improving schools and raising student achievement.

A better solution to the teacher-quality problem is to simplify the entry and hiring processes. Instead of requiring a long list of courses and degrees, test future teachers for their knowledge and skills. Allow principals to hire the teachers they need. The surest route to quality is to widen the entryway, deregulate the processes, and hold people accountable for their results—results judged primarily in terms of classroom effectiveness as gauged by the intellectual value that a teacher adds to pupils' learning. This strategy, we believe, will produce a larger supply of more able teachers.

The Problem

We know that better quality teachers make a big difference, yet many teachers feel unprepared to teach to high standards. Perhaps the gravest failing of our present arrangement is the many teachers who lack preparation in the subjects that they teach. Today's regulatory approach to entry into teaching compounds these problems. Because it places low priority on deep subject matter mastery and heavy emphasis on the things that colleges of education specialize in, many teachers get certified without having mastered the content that they are expected to impart to their students.

The Romance of Regulation

For decades, the dominant approach to "quality control" for U.S. teachers has been state regulation of entry into the profession. Today, in response to widening concern about teacher quality, most states are tightening the regulatory vise, making it harder to enter teaching by piling on new requirements for certification. Such measures will centralize and standardize the licensure process even more, curbing diversity in the sources and entry paths followed by teachers and shifting authority from local school boards and state agencies to professional education organizations and standards committees.

Shortcomings of the Regulatory Strategy

The regulatory strategy has failed. What makes state regulation of entry into teaching so dysfunctional is not that its standards are low but that it invariably focuses on "inputs"—courses taken, requirements met, time spent, and activities engaged in—rather than results, particularly as gauged by student learning. It judges one's "performance" by the subjective opinions of other teachers and professors.

Instead, teachers should be evaluated based on the only measure that really matters: whether their pupils are learning. William Sanders of the University of Tennessee has developed a "value-added" technique that uses careful statistical analysis to identify the

* This article is a synopsis of a policy statement released by the Thomas B. Fordham Foundation on April 20, 1999 on behalf of several dozen state officials, prominent education analysts, and veteran practitioners. A list of the original signers and a copy of the complete text can be found at www.edexcellence.net/library/teacher.html.

gains that students make during a school year and to estimate the effects of individual teachers on pupil progress. This allows policymakers, taxpayers, and parents to see for themselves how much teachers are helping students to learn.

The technique has proven to be a powerful tool for evaluating teachers. Sanders finds, for example, that the top 20% of teachers boost the scores of low-achieving pupils by 53 percentile points on average, while the bottom 20% of teachers produce gains of only 14 percentile points.

Today's regulations, and the additional regulations urged by reformers within the profession, focus on inputs that display little or no relationship to classroom success. This is not education reform. This is the illusion of reform.

Putting Principles into Practice

The common-sense strategy for improving teacher quality is surprisingly straightforward: states should empower principals to employ teachers as they see fit, and then hold those principals accountable for their schools' results. Since every regulation that restricts entry to the profession excludes some potentially good teachers from public education, regulation should be reduced to the bare minimum.

What would state policies look like if based on these assumptions? Four points are key.

1. *States should develop results-based accountability systems for schools and teachers as well as students.* States should have accountability systems operating at the student, classroom, and building levels to measure pupil achievement and issue report cards for schools. Such information should be disseminated to students, parents, and the public. States should reward successful schools and should have—and use—the authority to intervene in failing schools. They may also institute market-based accountability via various forms of school choice.

Principals need accountability, too. Their jobs and salaries ought to be tied to their schools' performance. To provide principals with the information by which to hold their faculty and staff accountable, states can provide student achievement data, disaggregated by teacher.

2. *States should empower school-level administrators with the authority to make personnel decisions.* Authority must accompany accountability. Quality control should be the responsibility of school leaders, who have freedom to hire from a wide pool of teaching candidates and to pay teachers based on marketplace conditions or individual performance.

Teacher tenure ought not be allowed to interfere. Multiyear contracts are far preferable. It must be possible to remove incompetent teachers at reasonable cost and within a reasonable period of time, without sacrificing their right to protection against capricious and *ad hominem* treatment.

States should encourage differential pay so that schools can pay outstanding teachers more and adjust teacher pay for labor market conditions, subject specialty, and the challenge of working in tough schools. A flexible salary structure would allow paychecks to respond to marketplace signals while creating financial incentives for excellent teaching and practical sanctions for poor teaching.

To work well, this system obviously requires capable principals—education leaders who know how to judge good teaching and are prepared to act on the basis of such evaluations. Such people can be drawn into the schools if the incentives are right. Executive training for current principals will also help them handle this difficult evolution of their role.

3. *States should enforce minimal regulations to ensure that teachers do no harm.* States should perform background checks for all teaching candidates and require prospective teachers to have a bachelor's degree in an academic field. They should also ensure that new teachers are adequately grounded in the subject matter they are expected to teach, either by requiring that they major in the subject(s) that they will teach or by mandating rigorous subject matter examinations.

4. *States should open more paths into the classroom, encourage diversity and choice among forms of preparation for teaching, and welcome into the profession a larger pool of talented and well-educated people who would like to teach.* Policymakers should eliminate monopoly control and challenge "one-best-system" attitudes toward teacher preparation. Traditional training programs should be closely scrutinized for their length, cost, burden, and value. States should publish detailed factual information about individual programs and their graduates. Information about the effectiveness of recent graduates (as measured by the value-added achievement scores of their pupils) should be made public; until this is available, institution-specific data should include the placement rate of graduates and the percentage of graduates passing state teacher tests. (Some of this information was mandated by the Higher Education Amendments of 1998.)

States should expand the pool of talented teaching candidates by: allowing individuals who have not attended schools of education to teach, provided that they meet the minimum standards outlined above; encouraging programs that provide compressed basic training for prospective teachers; and using financial incentives such as scholarships, loan forgiveness programs, and signing bonuses to attract outstanding college graduates. ⌘

Regulation Versus Markets:

The Case for Greater Flexibility in the Market for Public School Teachers

Michael Podgursky, University of Missouri-Columbia

Compared to other labor markets, particularly other professional labor markets, the market for public school teachers is highly regulated. Mandatory licensing imposes costly entry barriers that tend to discourage interest from individuals with good labor market alternatives to teaching. Collective bargaining, teacher tenure, and the single salary schedule inhibit flexible and performance-driven wage setting and make it difficult to reward good teachers and weed out poor ones. The single salary schedule also exacerbates problems of recruiting teachers in shortage fields such as special education, math, and science.

This article focuses on two features of the public-sector labor market: mandatory certification and the single salary schedule. Both restrict the operation of the market and suppress competition—the first by limiting market entry, and the second by standardizing pay over large groups of teachers. Both also play an important role in determining the quality of the teacher workforce.

This article discusses some of the restriction's costs and benefits; contrasts the policies of public and private schools; and shows that the latter are less likely to hire certified teachers and more likely to pursue flexible, market-based compensation policies. There are two important factors that influence private (and charter) school behavior: (1) the stronger pressure they feel to pursue efficient personnel policies and (2) the smaller size of the typical wage-setting unit, which tends to ameliorate information problems concerning teacher quality and performance and make teacher pay more market-sensitive and performance-driven.

Mandatory Teacher Certification

All 50 states require teachers to hold a license to teach in public schools, a requirement that economists term a "barrier to entry" into the labor market. (To teach, a prospective teacher must invest time and money to acquire a license, usually completing one or two years of coursework in an approved training program, followed by an examination.)

Teacher licensing, like any regulation, has costs and benefits. Costs for potential teachers include out-of-pocket enrollment costs, as well as the opportunity cost of time (i.e., earnings opportunities given up while in school). Licensing requirements that take the form of required coursework tend to discourage entry by students whose alternative time is more valuable, such as academically talented students who might have pursued other academic disciplines and more mature "second career" entrants, including women with young children.

These costs must be balanced against the benefits of the licensing requirements and required pedagogy courses. There are several strands of research that have been cited in defense of mandatory pedagogical training. Studies suggest that, at least in mathematics instruction, both content knowledge and pedagogical training may improve student performance. In addition, however, a consistent finding in the education-production function literature is that teachers' general academic skills, as measured by tests such as the ACT or SAT, are associated with higher student test scores. Evidence suggests that formal coursework in pedagogy, content knowledge, and general academic skills all have positive effects on teachers' effectiveness in the classroom; regression studies demonstrating the value of pedagogical training indicate that schools can trade off this training for other productive teacher attributes.

Costs of Exclusion

The findings on the benefits of teacher certification are mixed. Even if all certified teachers were on average superior teachers, however, this would not necessarily mean that uncertified teachers should be excluded from the market. The dispersion of teacher quality within the certified and uncertified populations is very large relative to the mean, and a certain number of uncertified candidates will always be superior to certified candidates.

For example, judging from the relatively modest coefficients one finds in the education-production function literature, one might argue that the average certified teacher is better than 60% of uncertified applicants. In this case, with two randomly drawn certified and two randomly drawn uncertified applicants, an uncertified candidate will be the best candidate 41% of the time; with two uncertified and one certified candidates, an uncertified candidate will be the best candidate 59% of the time.

Certification alone should not be used to assess teaching quality. Local supervisors are in a good position to assess the quality of teaching applicants directly through interviews, student teaching, and practice classes, for example. A number of education-production function studies find that principal evaluations of teaching performance are valid predictors of student performance.

Employment of Certified Teachers in Private and Charter Schools

In assessing the value of certification, it is useful to compare

hiring practices in public and private schools. In the public sector, 95.6% of teachers hold state certification in their primary teaching area; in nonreligious private schools, 55.9% of teachers are certified overall and 35.1% are certified at the secondary level. Private schools operate in a competitive market and are under pressure to deliver quality, cost-effective educational services. They are also much smaller and thus in a better position to directly monitor quality. Consequently, they may attach less value to readily observed credentials such as certification in making staffing decisions.

Charter schools are held accountable through market pressures, like private schools, as well as by the charter renewal process. In a number of states charter schools are allowed to bypass licensing requirements and hire uncertified teachers. Data from the third year report of the major U.S. Department of Education study of charter schools suggests that charters avail themselves of this opportunity when it is available, although more research is needed on this subject.

How does the academic quality of uncertified teachers compare to that of certified teachers? One measure is the selectivity of a teacher's alma mater. Several production function studies find that the selectivity of a teacher's undergraduate college is correlated with student academic achievement. The share of teachers graduating from selective institutions is consistently higher in the uncertified population; data suggest that private schools use their greater flexibility to trade teacher certification for teacher academic quality, compensating for a lack of certification with other academic skills.

Rigid Pay Structures

The single salary schedule, which bases pay entirely on teachers' experience and academic credentials, is a nearly universal feature of public sector teacher labor markets. Under a single salary schedule, there are no differentials to reflect field, individual effort, talent, or merit. In this system, it is the number of years at college that counts, not the quality of a college; it is how long a teacher has taught, not how well. The relative difficulty of recruiting or retaining teachers with particular skills is completely irrelevant in such a system.

Differential pay by field within professions is pervasive. Professional fields that require greater training or draw upon relatively specialized skills typically command higher earnings, as do jobs that involve greater stress and less pleasant working conditions. Economists see pay differentials as central to a market's efficient operation.

The single salary schedule suppresses these differentials and yields perverse, unintended consequences. If schools differ in terms of non-pecuniary conditions (e.g., safety, student rowdiness) then equalizing teacher pay will disequalize teacher quality. To equalize quality, districts will need to disequalize pay. Collective bargaining agreements in large urban school districts, which impose the same salary schedule over hundreds of schools, suppress pay differentials and induce teachers to leave the most troubled schools.

Public-Private Comparisons

Economists have long recognized the importance of size in a firm's level and structure of compensation, as well as in its choice of wage-payment mechanisms. Economic theory suggests that small firms are more likely to use merit or performance-based individual pay, while large firms tend to standardize pay; in private schools, where the typical wage-setting unit is roughly 100 times smaller than in public schools, pay does in fact float to the market level more readily.

According to data from the 1993-94 Schools and Staffing Surveys, roughly 99% of public schools report that they have a salary schedule to compensate teachers as compared to 67% of private schools. Even among the private schools reporting that they use salary schedules, academic credentials and experience explained less of the variation in pay in private (as compared to public) schools.

In a 1998 survey of 66 charter schools in Arizona, 30% of respondents reported using a salary structure that tied pay to performance measures such as student test scores, parent satisfaction surveys, attendance, and classroom observations. My own anecdotal evidence also leads me to believe that many charter schools—such as the Edison Project, for example—are experimenting with alternative and innovative compensation plans.

Conclusion

Personnel policies in private schools, and, given preliminary data, charter schools, are very different from those in traditional public schools. I believe that these differences are explained by two factors: strong incentives for employers to adopt efficient and flexible personnel policies due to competition; and a size differential that allows private and charter employers to better monitor teacher quality and performance.

Flexibility in recruitment and compensation helps private schools recruit, retain, and motivate a high-quality workforce in a cost-effective manner. Private schools' experience, as well as evidence from the unfolding charter school experiment, provides valuable information for traditional public schools. ⌘

Ten Years of Teach For America: Our Record and Learnings

Wendy Kopp, Teach For America

Teach For America—the national corps that recruits outstanding recent college graduates of all academic majors to commit two years to teach in urban and rural public schools—began in 1989 as a response to the inequities that exist in the quality of public education between low- and high-income communities. Our mission is to have a positive impact on the lives of students and the cultures of schools during corps members' two-year commitments, while simultaneously influencing the consciousness and career direction of the corps members themselves.

With so much attention surrounding the issue of attracting and developing outstanding new teachers, particularly those who want to teach in urban and rural public schools, it seems appropriate to examine Teach For America's experience. This article looks at who joins, how they perform during their two-year commitments, what they do after two years, and what Teach For America has learned about new teacher recruitment, selection, training, and ongoing support.

Who Joins

In 1999, 776 individuals from 270 colleges and universities began teaching through Teach For America. Representing dozens of academic majors, these corps members' average GPA was 3.4 and average self-reported SAT scores were 1248; more than 85% of them held a leadership position on their college campuses. Asked what they would have done had they not joined Teach For America, just 14% of 1999 corps members reported they would have secured a teaching position through another channel.

Demographically, 36% of the 1999 corps members are people of color; 14% are African American, 7% are Latino/Hispanic, 8% are Asian American, 5% are Multi-Ethnic, and 2% are of other ethnicities. Twenty-seven percent of corps members are male, while 73% are female.

How They Perform

Corps members assume teaching positions in some of the most underresourced school systems in the country. They teach in 13 geographic areas, including urban and rural sites. Corps members are hired through existing alternate routes to certification or through other waivers.

Corps members demonstrate leadership in their schools. On their 1999 year-end reports, more than 60% of corps members reported leading extracurricular activities in their schools, while 36% founded new ones. Forty-five percent of corps members sat on school-improvement committees and 41% secured grants for their classrooms and schools. Corp members' retention rate compares favorably to that of other beginning teachers placed in the same schools: 89% of corps members who began teaching in September 1997 completed their two-year commitments by June 1999.

According to the most recent evaluation by the research firm of Kane, Parsons and Associates, principals are very satisfied with the corps members in their schools: 96% of principals responding to the survey thought the corps members' presence had been advantageous for schools and students.

What They Do After Teach For America

After completing their corps service, Teach For America alumni find their perspective on education changed by their work in underresourced schools. Many alumni draw on their Teach For America experience to contribute to education and low-income communities. According to a survey of alumni completed in the fall of 1998, 58% of alumni have remained in the field of education—40% as teachers and 18% as school administrators and in other capacities. Alumni also choose to work towards expanding educational opportunity from other sectors, or draw on their Teach For America experience in careers in other fields.

Our Program: What We Have Learned

Recruitment

We have learned that personal contact with students is our most powerful strategy for recruiting the most outstanding candidates. Our full-time recruiters work out of three offices nationwide to coordinate additional help from influential faculty, student volunteers, corps members, and alumni.

Teach For America recruits at approximately 200 campuses chosen for their high academic standards and ethnic diversity. Teach For America makes a particular effort to recruit African-American and Latino students. In addition, to help ensure that corps members can participate in Teach For America regardless of their economic background, we offer need-based financial aid to help corps members meet the costs of relocating to their teaching assignments and making ends meet between graduation and their first paycheck.

We have discovered four main challenges in recruiting the students with the most career options:

1. The general perception that teaching is a downwardly mobile profession that attracts

people without other opportunities. To overcome this challenge, we send the message that Teach For America is extremely selective and that other outstanding recent college graduates have chosen to teach.

2. Students' view of teaching as a service activity like that in which they participated in college, rather than an extremely challenging job opportunity. To counter this perception, we seek to describe teaching as an unparalleled leadership opportunity, and to describe the impact and experience previous corps members have had.
3. Students' fear that teaching won't put them on a promising career track. We emphasize that we ask only for a two-year commitment; that graduate schools and corporations look favorably upon corps members' experience; and that Teach For America alumni have built on their initial teaching experiences to become leaders in a variety of fields.
4. Students' fear that teaching will be an isolating experience. We aim to communicate that Teach For America provides an opportunity to build a lasting network with other recent graduates who share their convictions.

Selection

We look for three things throughout an intensive application process: leadership traits, an articulated desire to teach in underresourced areas, and a belief in the high potential of students growing up in low-income areas.

In order to gain a holistic view of each candidate, we have developed a multi-layered selection process. Candidates begin by submitting a written essay application along with written references and their college transcripts. The most promising candidates chosen from these applications must teach a sample lesson, undergo an individual interview, and participate in a group discussion about an educational issue.

Training

Our goal is to ensure that by the time corps members assume teaching responsibilities, they understand that their fundamental responsibility as a teacher is to effect significant gains in student achievement; that they have internalized a framework for accomplishing this responsibility; and that they understand that it will be their responsibility to advance their development as a teacher once they begin teaching.

There are two major differences between our current approach to preservice training and our approach of 10 years ago. The first is the structure of corps members' student-teaching experience. Ten years ago, our 500 corps members student-taught in 500 classrooms across Los Angeles. This experience did not give corps members a realistic understanding of what is entailed in setting up a classroom, and the quality of the student teaching opportunities varied widely. Five years ago we began to run our own summer school for students as a way both to gain more control over the quality of student teaching experiences and to allow corps members to be fully responsible for a classroom.

We also developed a curriculum that provides a highly structured professional development experience for corps members. The curriculum aims to put a variety of strategies and their accompanying theories into a framework for attaining gains in student achievement.

Ongoing Support

Teach For America encourages corps members to pursue specific strategies to maximize their effectiveness: to seek feedback from teachers, observe other teachers, share best practices with other teachers, advance their knowledge of the theories and practices of teaching through readings and courses, and benchmark their expectations for students by observing students at other schools that are widely regarded as excellent.

We aim to help corps members pursue these professional development opportunities by developing a network of resources for them to tap into. We cluster them within schools so that they can support and help orient each other. Depending on the local area, offices also organize discussion groups among corps members, provide corps members with access to master teachers, and form relationships with excellent schools that will open their doors to corps members.

Many of our local offices have also established relationships with local universities that enable corps members to earn masters' degrees in programs designed to address the challenges of underresourced schools.

Where We Are Headed

Given a recent increase in interest among college students in joining Teach For America, we are currently working to double the size of the corps and to expand into new urban and rural communities. As of the fall of 2002, we expect that 2,000 corps members will be teaching across the country in our 13 existing communities as well as in three new urban sites and two new rural sites. In this way, we hope to be an even more active force in the broader effort to ensure that where one is born in this country does not determine his or her chances of success. ⌘

Generic Aspects of Effective Teaching

Jere Brophy, Michigan State University

Classroom teaching is difficult to study because it is a multifaceted professional practice that takes place in a complex and evolving interpersonal context. Nevertheless, research on teaching has begun to establish a knowledge base capable of informing teachers' planning and decision-making. This article addresses generic aspects of teaching that apply across grade levels and subject areas, focusing on practices that are related to learning outcomes while recognizing the need for a supportive classroom climate and positive student attitudes toward schooling, teachers, and classmates.

The developing research base must be understood and interpreted accurately. Researchers need to summarize their findings precisely and qualify them appropriately; educators need to appreciate the complexity of good teaching instead of seeking simple formulas and to think in terms of building on the existing knowledge base.

Research on Teaching for Understanding and Use of Knowledge

Process-outcome research, which started in the 1970s, began to provide a knowledge base capable of moving the field of education beyond testimonials and unsupported claims to scientific statements, based on credible data, about effective teaching. (Process-outcome research identifies relationships between classroom processes and student outcomes—i.e., changes in students' knowledge, skills, values, or dispositions that represent progress toward instructional goals.)

During the 1980s, research emerged that emphasized teaching subject matter for understanding and use of knowledge. This research focused on particular curriculum units or even individual lessons, taking into account the teacher's instructional goals and assessing student learning accordingly. Current research also focuses on the role of the student, recognizing that students develop new knowledge through a process of active construction, facilitated by the interactive discourse that occurs during lessons and activities.

Although research on teaching school subjects for understanding and use of knowledge is new, it has already produced successful experimental programs in most subjects. Analyses of these programs have identified a set of principles and practices that are common to most if not all of them. These include:

1. The curriculum is designed to equip students with knowledge, skills, values, and dispositions that they will find useful both in and out of school.
2. Instructional goals emphasize developing student expertise within an application context and with an emphasis on conceptual understanding of knowledge and self-regulated use of skills.
3. The curriculum addresses limited content but develops it sufficiently to foster conceptual understanding.
4. Content is organized around a limited set of key understandings and principles.
5. Teachers structure information and scaffold students' learning efforts.
6. Students actively make sense of input and construct meaning.
7. Instruction builds on accurate prior knowledge and stimulates conceptual change if necessary.
8. Activities and assignments feature authentic tasks that call for problem solving or critical thinking.
9. Higher order thinking skills are developed in the process of teaching subject-matter knowledge within application contexts.
10. The social environment in the classroom—"a learning community"—features discourse or dialogue designed to promote understanding.

With this approach to teaching, skills are taught holistically within the context of applying knowledge content. Skills are presented as strategies adapted to particular purposes and situations, with an emphasis on modeling the cognitive and metacognitive components involved and explaining the necessary conditional knowledge.

Twelve Principles of Effective Teaching

There are several fundamental assumptions underlying the following principles, including: (a) no single teaching method can be the method of choice for all occasions; (b) the optimal mixture of instructional methods and learning activities will evolve as classes progress; and (c) each principle should be applied within the context of the others.

1. *Supportive Classroom Climate.* Students learn best within cohesive and caring learning communities. Productive contexts for learning feature an ethic of caring that pervades teacher–student and student–student interactions and transcends individual differences.

2. *Opportunity to Learn.* Students learn more when most of the available time is allocated to curriculum-related activities and when the classroom management system is designed to maintain

students' engagement in those activities. Teachers who approach management as a process of establishing an effective learning environment tend to be more successful than teachers who emphasize their roles as disciplinarians.

3. *Curricular Alignment.* All components of the curriculum are aligned to create a cohesive program for accomplishing instructional purposes and goals. Teachers' curriculum development should be goal-oriented, with the overall purposes and goals of the instruction (and not the pressure to cover test items) guiding curricular planning and decision making.

4. *Establishing Learning Orientations.* Teachers can prepare students for learning by providing an initial structure to clarify intended outcomes and cue desired learning strategies. Students should be oriented to lessons with previews, which can communicate the nature and purpose of the activity, connect it to prior knowledge, and cue the kinds of responses that the activity requires.

5. *Coherent Content.* To facilitate meaningful learning and retention, content should be explained clearly and developed with an emphasis on its structure and connections. Skills are likely to be learned and used effectively if taught as strategies adapted to particular purposes and situations, with attention to when and how to apply them.

6. *Thoughtful Discourse.* Questions are planned to engage students in sustained discourse structured around powerful ideas. Effective teachers structure a great deal of content-based discourse to allow students to construct and communicate content-related ideas. The forms and cognitive levels of these questions should be suited to instructional goals.

7. *Practice and Application Activities.* Students need sufficient opportunities to practice and apply what they are learning, and to receive improvement-oriented feedback. Practice should be embedded within application contexts that feature conceptual understanding of knowledge and self-regulated application of skills. Students should receive timely, informative feedback.

8. *Scaffolding Students' Task Engagement.* Teachers should provide whatever assistance students need to enable them to productively engage in learning activities. Activities and assignments should motivate student engagement, constitute meaningful learning experiences, and allow students to achieve high rates of success if they invest reasonable time and effort.

9. *Strategy Teaching.* Teachers should model and instruct students in learning and self-regulation strategies. General learning and study skills as well as domain-specific skills are most likely to be learned thoroughly if they are taught as strategies to be implemented with metacognitive awareness and self-regulation. Teachers should explain skills' purposes and when they can be used.

10. *Cooperative Learning.* Students often benefit from working in pairs or small groups to construct understandings or help one another master skills. Cooperative learning promotes affective and social benefits. It also engages students in discourse that requires them to make their task-related information-processing and problem-solving strategies explicit (and thus available for discussion and reflection).

11. *Goal-Oriented Assessment.* Teachers should use a variety of formal and informal assessment methods to monitor progress toward learning goals. Well-developed curricula include strong, functional assessment components that are aligned with the curriculum's major purposes and goals and integrated with the curriculum's content, instructional methods, and learning activities. Assessment should be an ongoing and integral part of each instructional unit.

12. *Achievement Expectations.* Teachers should establish and follow through on appropriate expectations for learning outcomes. Teachers' expectations concerning what their students are capable of accomplishing tend to shape both what teachers attempt to elicit from their students and what the students expect from themselves—teachers should therefore set goals in terms of floors (i.e., minimally acceptable standards), not ceilings.

Conclusion

The best teaching is adapted to the context, including the instructional purposes and goals, the students, and the subject matter. Research-based information can only inform teachers about the tradeoffs involved in decision alternatives; it cannot make those decisions for them. It is teachers, working within their state and district guidelines, who must decide what goals to pursue with their students and what combinations of content representations, instructional methods, and learning activities will be most helpful in assisting their students to accomplish the goals.

Rather than viewing such qualifications on research findings as frustrations or even as evidence that research is not helpful, researchers and teachers need to appreciate them as indicative of the complexities involved in adapting instruction to students and contexts. Researchers are making progress in learning about these complexities and their potential implications for instruction, and will continue to build on this knowledge base. ⌘

Promising New Instructional Practices

Phyllis C. Blumenfeld, Joseph S. Krajcik, Ronald W. Marx, and Elliot Soloway, University of Michigan School of Education

Over the last 20 years, approaches to teaching for understanding have evolved from models that stress information transmission to models that emphasize student transformation of knowledge and the processes in which students engage as they learn. These processes are important because they mediate between the instructional events organized by teachers and the learning ultimately achieved by students.

A number of programs are currently being implemented that attempt to put individual and social constructivist ideas into practice. The programs differ in their points of departure, degree of inclusion of constructivist elements, and extensiveness of the intervention. Most combine features of cognitive construction with features of social constructivism. These features include the ideas of authentic tasks, discourse, assessment, cognitive tools, and instructional scaffolding. Some address very specific concepts and topics; others are more general.

Transformation models are still in the process of evolving and there are important differences in how they view learning and, by extension, teaching. In this article, we describe three educational applications that incorporate constructivist elements, focusing on science programs designed to teach for understanding. We also point to remaining questions and challenges, and describe some initial attempts at solutions.

Sample Programs

Scientists in Action

Scientists in Action is a series of videodisk-based science units, targeted at 5th and 6th graders, that has been developed by the Cognition and Technology Group at Vanderbilt. Scientists in Action primarily emphasizes developing students' scientific reasoning and problem-solving strategies, and integrating knowledge across subject areas.

The program is designed around the principle of anchored instruction. Video helps to create complex contexts within which problems are situated. Each video presents a simulated realistic scientific dilemma, comprised of several related problems. As the story develops, students are presented with a structured sequence of questions; the video is paused in predetermined places so students can answer the questions.

During the problem-solving process, students may view excerpts from the video again. They can also use the relevant reference material that accompanies each video (e.g., maps, response guidebooks, and materials for "hands-on" chemistry experiments).

The developers of Scientists in Action encourage teachers to follow up on issues and content raised in the videos with student-generated projects and reports. Students may also write additional questions related to scenes they have watched, or construct new dilemma scenarios.

Fostering Communities of Learners

In elementary and middle school Fostering Communities of Learners (FCL) classrooms, the entire class studies a common theme that crosses traditional disciplinary boundaries. FCL emphasizes broad and enduring themes that can be revisited at increasingly mature levels of understanding. Goals include promoting the critical thinking and reflection skills that underlie higher literacy and creating self-directed learners who have a sense of responsibility to the group and a sense of ownership of the investigation.

FCL provides a structure for collaboration and cooperation. Students pursue different questions and learn different skills from others in the class, so that knowledge and skills are distributed throughout the classroom. FCL uses Reciprocal Teaching as an important component of the research process. Reciprocal Teaching is a structured method for improving students' reading comprehension that scaffolds students' use of text-based reading strategies to ensure that all students within a research group participate in learning about and understanding their group's subtopic. This approach fosters individual and group accountability for learning.

Project-Based Science

Project-based science allows students and teachers to use a variety of technological tools such as telecommunication, microcomputer-based laboratories, microworlds, and graphing packages. Using technology in project-based science enhances the physical accessibility of the information and facilitates its intellectual accessibility—it makes the environment more authentic to students because the computer accesses real data, expands interaction and collaboration with others via networks, and emulates tools used by experts.

The Technological Education Research Center develops project-based approaches to learning in which technology, especially telecommunications, plays a key role. Units are oriented around such questions as "What's in our water?" and "How can we light a house?" To answer these questions, students plan investigations and gather,

interpret, and share data with others. Collaboration via telecommunication is encouraged.

The University of Michigan group Highly Interactive Computing in Education (Hi-Ce) has focused on a theoretical base for project-based instruction along with developing pedagogy, curriculum, and technology for students to use in data collection, analysis, and interpretation. Project-based science has been used as the basis for the redesign of a high school curriculum so that different science disciplines are integrated into a three-year program.

Analysis of Programs

Instructional Design

The above programs differ considerably in their design, the theoretical elements of constructivist theory that they emphasize, and the application of these elements. Researchers interested in innovations of this type have examined student learning for each program but have not systematically addressed the effect of variations on large numbers of students—the approaches are quite new and some have only recently been widely implemented.

Questions about instructional design and practice are likely to include: (1) What constitutes an authentic task? (2) What topics, problems, and investigations will motivate youngsters and promote learning? (3) How can collaboration be established? and (4) How can inquiry be supported through instructional scaffolding?

Generally, there has not been enough experience with these types of programs to reveal the characteristics of questions that are conceptually rich, feasible, and motivational for students. Programs vary considerably in their focus (and whether it is predetermined); how structured they are; and how much choice students have in their determination.

Programs also vary in how they achieve authenticity. All programs appear to potentially afford opportunities for higher-order thinking, development of deep knowledge, engagement in substantive conversations, and connectedness beyond the classroom. How connectedness is achieved, however, differs considerably.

The way in which collaboration is defined and organized also varies considerably. In some programs, collaboration is relatively structured and is more like cooperative learning, while other programs use strategies and organization that are less clearly defined.

Technology

Issues remain about how to design and exploit the benefits of technology—some programs use specially designed software as a centerpiece, while others reuse tools across different curriculum units. Questions include how to create programs that are learner-centered so that the degree of scaffolding can be tailored depending on student needs; how to determine what constitutes effective scaffolding; and how to make technology user-friendly.

Participation, Thoughtfulness, Motivation

These approaches to teaching for understanding require students to participate more and to take more responsibility for learning; they assume that students will be motivated to ask questions, join in discussion, and engage in sustained inquiry and evaluation of their ideas. Whether students are willing to participate at this level is an open question, and program evaluations often do not discuss issues of student participation. Little is known about how actively students participate and whether their participation is widespread. Reports from several programs also attest to the challenge of eliciting thoughtfulness.

Issues of participation and thoughtfulness are closely linked to motivation. A fundamental goal of the new approaches is for students to take responsibility for their own learning. To be successful, these approaches require students to invest considerable mental effort in the search for solutions to problems. However, motivational elements are not always explicitly dealt with in these programs, and it is often largely assumed that students will be motivated to learn by the fact that they work with others on authentic problems, using technological tools.

Individual Differences

The various programs described above have been implemented at different grade levels. Program designers have not written about the alterations that would be necessary if programs were to be used in lower or higher grades. Moreover, developmental studies have not systematically examined age differences in the types of questions that are conceptually rich, nor in the teaching strategies that are appropriate. These questions need to be considered specifically within the constructivist framework of teaching for understanding.

There are also questions regarding issues of diversity. While these programs have been tried in schools serving different types of communities and populations, no systematic studies have been conducted on how students from varied backgrounds respond. There are case studies that point to the fact that constructivist programs can successfully involve poor, minority students, and such programs have features identified as beneficial for diverse students. However, in light of considerable evidence that children from varied backgrounds bring different participation styles, discourse patterns, ways of interacting socially, and norms for language and number use, these questions also deserve attention. ⌘

Getting to Highest-Priority Outcomes:

Designing Urban Preparation Programs for All Teacher Candidates

Victoria Chou and Mary Bay, College of Education and Council on Teacher Education, University of Illinois at Chicago

Even before the 1996 publication of the influential *What Matters Most: Teaching for America's Future,* institutions of higher education were criticized for teacher preparation and professional development that failed to address weak subject matter preparation; prepared teachers mainly to support "mildly suburban" students; and did not provide in-service teachers with professional support as they began their careers. *What Matters Most* also pointed to a significant shortage of qualified teachers for low-income, large-city schools with predominantly minority student populations.

Despite acknowledging the need for quality teachers for today's students, critics have expressed little faith in the ability of education schools to prepare such teachers. The National Commission on Teaching and America's Future, for example, reported "major flaws in teacher preparation." Critics and friends have especially lamented education schools' inability to boost teacher quality in high-poverty urban and rural schools.

In many ways, such criticisms are based on outdated views of teacher preparation programs—teacher education reform activity has in fact accelerated in recent years, with significant changes at a number of universities. This article describes the University of Illinois at Chicago's (UIC) response to groundbreaking legislation that implemented a standards-based and assessment-driven approach to teacher and administrator licensure in Illinois. It details UIC's efforts to prepare teachers for the most challenging Chicago classrooms, explaining how it determined its projected outcomes and how it is working to change its approach to teacher education.

Choosing Outcomes

From the outset, UIC focused on preparing teachers for Chicago's most challenging schools. In these schools, there is high principal turnover and high rates of poverty, as well as low achievement scores and low teacher morale.

Increase Recruitment of Chicago-Based Teacher Candidates

Teacher shortages are very real in certain Chicago schools and neighborhoods; teacher recruitment for Chicago Public Schools (CPS) is complicated by a mandatory residency requirement. As it is well known that teacher candidates frequently wish to teach in the original communities in which they grew up, UIC decided to focus on recruiting candidates from Chicago who are more likely to teach in CPS after graduation.

Increase the Number of Qualified Teachers in CPS's Highest-Poverty Schools with Predominantly Minority Student Populations

Over the past 10 years, UIC has made substantial progress in establishing stable relationships for field placements with particular Chicago public schools. Yet although almost 90% of the system's students are African-American or Latino and 79% are from low-income families, data from teacher preparation programs revealed that UIC rarely placed interns and student teachers in the highest-poverty, lowest-achieving schools. Another UIC outcome is therefore to increase the number of preservice teachers in high-poverty, low-achieving schools and to provide support to potential mentors among the practicing teachers in the schools.

Ensure Teacher Candidates' Knowledge of Math and Science.

Too many prospective teachers are not strong students in subjects like math and science. There is also a severe disconnect, particularly in large institutions, between math/science faculty and math/science teacher educators regarding the best way to learn math and science. This obstacle must be overcome to guarantee sufficient math and science learning for teacher candidates.

Increase the Number of Qualified CPS Chemistry and Physics Teachers

CPS struggles to fill positions in math, science, and bilingual and special education, especially in the highest-poverty areas. Despite this need, UIC certified a total of only five chemistry teachers and one physics teacher in 3 years. In Chicago's public high schools, 21.4% of math and science teachers do not hold high school certification; in two high-poverty schools in which we work, the percentages are 57.9% and 30.8%.

Recognize and Reward the Work of Teacher Education in Higher Education

Schools of education are among the least valued units in institutions of higher education, and faculty members engaged in teacher education are the least valued within schools of education themselves. The faculty reward system must recognize the work of teacher education throughout colleges and universities.

Mapping Backwards to Teacher Preparation Program Development

Following is an overview of UIC's comprehensive and systemic

plan to prepare teachers for the most challenging classroom environments in Chicago.

Developing P-16 Partnerships: The UIC Council on Teacher Education

Recent proponents of teacher education claim that teacher preparation should be the responsibility of the entire campus. To encourage recognition of teacher education as a campus responsibility, all preservice teacher preparation at UIC is organized under a Council on Teacher Education.

Under the council's jurisdiction, the programs are developing a common conceptual framework and governance structure. A campus Secondary Teacher Education Advisory Committee that advises the council provides leadership for secondary certification programs in four colleges. The dean of liberal arts and sciences (LAS) has appointed an associate dean for curriculum and instruction who oversees LAS's six secondary teacher preparation programs. UIC is also considering organizing its widespread teacher professional development initiatives under the Council's rubric.

Recruiting Chicago-Based Teacher Candidates

Six years ago, with help from the DeWitt Wallace-Reader's Digest Pathways to Teaching Careers Program, we identified a group of bilingual teachers, largely Latino, who were awarded provisional teaching certificates by CPS and who were required to complete a certification program within six years of their date of hire. UIC is providing the necessary teacher preparation, including tuition support, initially supplied by DeWitt Wallace-Reader's Digest and now supplied by new grants raised by UIC. We are now trying to develop, via scholarships and programming, a pipeline of African-American and Latino teacher candidates to UIC from the Chicago City Colleges (CCC).

Increasing the Number of Qualified Teachers in CPS's Highest-Poverty Schools with Predominantly Minority Student Populations

Many of the nation's teacher preparation programs do not adequately address issues that are endemic to urban schools (e.g., racism, language differences, and poverty) and their effects on student mobility, truancy, dropout rates, and learning. UIC teacher preparation programs are endeavoring to devote serious attention to understanding children's and adolescents' life contexts in relation to schooling. Strategically, teacher preparation programs are starting to share limited resources. "Regular education" programs, for example, include learning about language-minority students (from the bilingual/ESL education program) and about students with special needs (from the special education program).

To foster students' abilities to teach in low-achieving or less-than-ideal classroom environments, UIC is planning early "low-stakes" internships designed to allow students to preview challenging teaching environments. UIC is also establishing a course of study to prepare practicing teachers to mentor teacher candidates and beginning teachers.

Ensuring Teacher Candidates' Math and Science Subject-Matter Learning

At UIC, math and science faculty have teamed with math and science education faculty on a National Science Foundation project to improve the math and science education of undergraduates, including those who are prospective teachers. The project develops and implements standards-based, constructivist content curricula in math and science. It recognizes the importance of disciplinary faculty teaching content in ways that help our teacher candidates to eventually teach the material themselves.

Increasing the Number of Qualified CPS Chemistry and Physics Teachers

With the support of the Polk Bros. Foundation, we are working with UIC's chemistry and physics departments this year to provide chemistry and physics endorsements for CPS high school teachers who are certified in general science. The program not only addresses chemistry and physics, but also focuses on preparing teachers to teach science to students with varying reading levels.

The experimental endorsement program allows scientists and teacher educators to exchange ideas about best teaching practices in science and the certification routes that might be most appropriate in view of the shortage of science teachers.

Recognizing and Rewarding the Work of Teacher Education in Higher Education

It will be crucial to reward and to ensure retention among faculty who engage in quality teacher preparation work. To this end, UIC:

1. has invested in non-tenure-track clinical faculty positions that are primarily designed to support program development and critical field instruction and mentoring for teacher candidates;
2. plans to conduct research on teacher preparation program initiatives to demonstrate the value of teacher preparation programs; and
3. will be developing a concentration in teacher education for

*(see **Getting** on p. 27)*

Quality Teachers Through Regional Collaboration

Diana Wyllie Rigden, Council for Basic Education

Research makes it clear that teacher knowledge and skills are essential for student learning: teachers and those who educate, train, license, hire, and retain them are therefore increasingly responsible for student achievement. As a result of a sense of shared responsibility for raising the quality of classroom teachers, five jurisdictions in the mid-Atlantic region—Delaware, the District of Columbia, Maryland, New Jersey, and Pennsylvania—are beginning to explore regional opportunities to establish and uphold high standards that will ensure knowledgeable, skilled, and qualified teachers in every classroom. This article describes the region's goals and early collaborative efforts.

Improving Student Learning

Political, business, and education leaders agree that improving the quality of education available to every student is a national priority. A number of reports in the early 1980s directed the nation's attention to concerns about the ability of high school graduates to compete effectively with their peers from other nations. By 1990,when President George Bush and the nation's governors met in Charlottesville, Virginia, to establish a set of National Education Goals, there was a consensus on the need to define the knowledge and skills students required to be adequately educated for the 21st century.

Today, 49 states and the District of Columbia expect elementary, middle, and high school students to achieve standards in the core subjects of mathematics, science, English, and social studies. Many states have implemented standards-based testing to make schools, principals, and teachers accountable for student learning. Moreover, districts and states are now ranked according to student achievement of standards.

Policy Levers for Improving Teacher Quality

In response to the demand for more effective teachers, states can (1) impose stronger licensure standards by instituting more rigorous licensure tests and requiring candidates to score at a higher level on the tests, or (2) create a stronger program approval and accreditation process based on candidate knowledge and performance, as well as on the courses and requirements of a traditional teacher preparation program.

State and education officials encourage (and often mandate) more rigorous standards for teacher preparation. Thirty-three states are working with the Interstate New Teacher Assessment and Support Consortium to develop and pilot new standards for teacher licensure, for example, and 46 states have partnered with the National Council for the Accreditation of Teacher Education to strengthen their process for approving teacher preparation programs. In the mid-Atlantic region, jurisdictions require a number of assessments of teacher candidates prior to awarding initial teacher licensure.

Teacher Supply and Demand

Student enrollment in elementary and secondary schools is at an all-time high. However, many current teachers are close to retirement. In the mid-Atlantic region, for example, a third of all teachers have more than 20 years of classroom experience. At the same time, many states have reduced class sizes in early elementary grades and have mandated changes in student–teacher ratios. The U.S. Department of Education predicts a national teacher shortage of more than 2.2 million teachers; the shortage will be more acute in certain disciplines (i.e., mathematics, science, and special education) and areas (i.e., inner-city urban and remote rural districts).

States must determine teacher licensure policies that ensure highly qualified teachers, standards for teacher education institutions and programs, and quality teacher assessments; and must decide how to ensure an adequate supply of qualified teachers for the mid-Atlantic region.

Regional Responses to Improving Teacher Quality

States are beginning to explore these issues on a regional basis: the Mid-Atlantic Regional Teacher Project (MARTP) brings together policymakers and education leaders from Delaware, the District of Columbia, Maryland, New Jersey, and Pennsylvania to work together to implement higher standards for teachers and to address teacher supply needs.

MARTP grew out of a regional invitational seminar, "Teachers and the Reform Agenda: A State and Regional Issue," hosted in February 1999 by the Laboratory for Student Success (LSS) at Temple University, the Council for Basic Education, and the Maryland Department of Education. Seminar participants made five recommendations for action to affect teacher quality:

- Strengthen reciprocity agreements to ensure competence and to reward excellence when teachers seek employment in any of the five jurisdictions.
- Make teacher preparation programs accountable to uniform high standards that will ensure teacher quality.
- Create a three-tiered licensure system throughout the region to

define progress standards of teaching.
- Establish an Electronic Hiring Hall to facilitate job applications, interviews, and employment throughout the region.
- Develop a regional system for collecting and evaluating data to determine teacher effectiveness and to serve as a basis for future collaboration.

Since all 50 states and the District of Columbia routinely regulate teacher preparation and license teachers, the five jurisdictions in the mid-Atlantic region have existing policies in each of these areas. MARTP discussions, however, explored ideas for each state to consider individually and as a group.

For example, MARTP recommended reviewing existing reciprocity agreements between the four states and the District of Columbia and discussing the feasibility of creating strategies for including portable pensions. MARTP participants discussed offering salary credits to teachers who meet "exemplary" performance levels based on regional licensure requirements, assessments, and criteria and are granted the title of "Meritorious New Teacher." The five jurisdictions might also consider establishing similar standards for teacher preparation, as there are currently significant differences among state standards and expectations for teacher preparation programs.

MARTP proposed a three-tiered licensure system that includes an initial license for beginning teachers, earned on completion of an accredited or approved teacher preparation program and the Praxis II examination; a continuing license, earned after completing a minimum two-year induction program and passing the INTASC performance assessment; and an advanced license, granted upon National Board Certification and based on strenuous teaching examinations, a portfolio of evidence of good teaching, and video demonstrations of classroom performance.

As envisioned, the Electronic Hiring Hall for the mid-Atlantic states would facilitate a streamlined, technology-based teacher recruitment and hiring process. Districts could post available teaching positions on the web, conduct searches for candidates with specific qualifications, and electronically track applications and candidates.

Since many of the areas in which the states may want to collaborate will require thoughtful research and analysis, MARTP also recommended a system of data collection and evaluation that would measure teacher effectiveness in terms of student learning. The information gained through a proposed longitudinal impact study would help shape future efforts to improve teacher effectiveness in the region.

Early Steps Towards Regional Collaboration

Managed by the Council for Basic Education, MARTP will continue to work in partnership with LSS and the Maryland Department of Education. The first step has been to hold state meetings within each of the five jurisdictions to discuss the collaboration's goals of aligning expectations to ensure teacher quality, creating strategies to share information to facilitate teacher hiring across the region, and establishing common strategies to support and retain new teachers.

During the summer and fall of 1999 stakeholder groups met in Delaware, the District of Columbia, and Maryland to discuss issues related to improving teacher quality. (Similar state meetings are scheduled for Pennsylvania and New Jersey.) Stakeholders identified problems particular to the state, and explored the opportunities presented by regional collaboration as well as concerns. Important issues raised in the state discussions included:

- establishing testing requirements (including "cut scores") and candidate expectations (including academic majors) for initial and continuing licensure that hold teachers to high standards in both content knowledge and teaching skills;
- establishing data systems that yield comparable information about supply and demand needs, teacher impact on student learning, and teacher quality;
- developing regional recruitment packages to attract and retain teachers;
- creating common expectations for alternate paths into teaching; and
- creating stronger support for new teachers through well-designed induction programs.

MARTP is still in the early stages of discussion, and the questions and topics raised at internal state meetings have yet to be presented to representatives from other jurisdictions. Even so, these ideas represent a starting point—states will begin to explore the possibility of creating common standards across the region for teaching applications, certification requirements, assessments for teacher licensure, effectiveness and accountability standards, regional loan forgiveness programs, induction programs, and retirement benefits. Despite certain challenges ahead, the mid-Atlantic states have taken important first steps to enable all schools and districts in the region to hire the knowledgeable, skilled teachers who will ensure that students learn. ⌘

Teacher Quality

(continued from p. 3)

into the classroom. Frequent assessments that tap understanding—not just the ability to repeat facts—should play a key role in instruction, the report says.

2. teachers must be prepared to teach subject matter in-depth and provide many examples in which the same concept is at work.
3. an emphasis on metacognition should be integrated into the curriculum in a variety of subject areas.

Evidence from research indicates that when these three principles are incorporated into teaching, student achievement improves. These findings call for well-qualified teachers who have been prepared not only in subject matter content, but also in how to teach it effectively.

Myth: Teacher candidates come from the bottom of the class and are weak academically.

Fact: The largest study to date of teachers' academic qualifications and licensure shows that high school teachers have stronger-than-average SAT scores compared to all graduating college seniors. Elementary school teachers have slightly lower-than-average SAT scores compared to all graduating seniors. Their performance as college students is average but not at the bottom of the class. So, while the myth may be somewhat true for elementary school teachers, it is not true for high school teachers of specific subjects.

However, American fourth graders score above average in science on the TIMS international study, for example, while American twelfth graders score near the bottom. The ability to motivate and relate to students, to use a variety of strategies, and to demonstrate enthusiasm and dedication are all important factors in helping students learn. Elementary school teachers may possess these skills to a greater degree than secondary school teachers.

Myth: Teacher candidates have little contact with the practical realities of pre-K-12 schools.

Fact: In accredited schools of education, teacher candidates are expected to gain skills in teaching under the direction of experienced, trained, mentor teachers. Candidates are expected to have a variety of field experiences throughout their program of preparation and to successfully complete a carefully supervised, lengthy clinical experience. The National Council for Accreditation of Teacher Education (NCATE) 2000 Standards require schools of education to form true collaborative partnerships with pre-K-12 schools, where curriculum planning and delivery are shared. Many of the concepts undergirding professional development schools have been incorporated into these standards.

Myth: Since all students pay the same tuition, universities allocate substantially the same resources to all professional schools on campus.

Fact: Schools of education spend less per student than any other professional schools on campus. Funds generated by education students are often funneled to other professional schools on campus—schools that must meet accreditation requirements. A recent study by Richard D. Howard, Randy Hitz, and Larry Baker concludes (1) that education programs are, in general, funded below the institutional average for all disciplines in all Carnegie Classifications; and (2) that education programs are less well-funded than other professional programs, with the exception of social work and accounting at research institutions.

Myth: Increasing teacher salaries will not increase the supply or quality of teachers.

Fact: How money is spent can be important. In 1985, the state of Connecticut embarked on a two-part strategy that raised standards for entry to teaching and substantially increased teacher salaries. Today the salaries in Connecticut are first in the nation; there is no shortage of teachers in Connecticut. Student achievement scores are among the highest in the nation. Connecticut has shown that it is possible to ensure a steady supply of teachers without compromising quality.

Myth: There is no difference in the effectiveness of prepared and unprepared teachers. Teacher preparation does not make a difference.

Fact: Over 100 studies have documented that well prepared, fully licensed teachers are more effective than those with little or no preparation.

A 1996-97 study conducted by the University of Texas at Arlington's Charles A. Dana Center, for example, showed that Texas students perform better on state exams when their instructors are fully licensed in the subjects they teach. The passing rate for Hispanic third graders on the 1997 Texas state assessment jumped from 58.7% to 67.5% when their teachers were fully licensed in their field. African-American students experienced similar results, as did the student population as a whole.

Other data support the Dana Center finding. Another Texas study showed that the influence of teachers on student achievement is many times greater than any other commonly observed variable. Sanders and Rivers report data from Tennessee that shows that two equally performing second graders can be separated by as many as 50 percentile points by the time they reach the fifth grade,

solely as a result of being taught by teachers whose effectiveness varies greatly. Other scholars have demonstrated similar results. Thus, students of fully prepared teachers demonstrate larger achievement gains than students whose teachers are not prepared.

Fully prepared teachers are more able to recognize students' individual needs and customize instruction for them; to establish a positive climate; and to respond to student needs.

In addition, in terms of the academic qualifications of teachers, studies indicate that those who have received high-quality teacher preparation score higher than other candidates on state licensing exams. The largest study of teacher qualifications to date, by ETS, concludes that teacher candidates who graduate from NCATE-accredited schools of education pass content state licensing examinations at the highest rate. Of all PRAXIS II test takers, 91% of teacher candidates graduating from NCATE-accredited institutions passed the exam, as compared to 83% of those graduating from unaccredited colleges of education. Individuals who never attended a teacher preparation program had the lowest passing rate of all PRAXIS test takers (74%). Preparation makes a difference, and preparation at an NCATE-accredited school of education makes an even bigger difference.

Conclusion

As policymakers consider ways to better prepare the teaching force for the 21st century, they should design solutions that are based on today's realities. Policies based on myths are not likely to have the desired results. If we are to develop policies that will actually strengthen the teaching profession, policymakers, researchers, and educators must work together to design them. ⌘

A Commitment

(continued from p. 9)

Conclusion

Undoubtedly, some of the reforms to improve the quality of U.S. public education will be timely, costly, and challenging. However, Thomas Wolfe once called America a place "where miracles not only happen, but where they happen all the time." I believe that we owe it to our children and our nation to ensure that such miracles continue to happen—one student at a time, through one quality teacher at a time—in every classroom across America. ⌘

Getting

(continued from p. 23)

prospective urban teacher educators. Doctoral students who are studying teacher education will function as field instructors under the guidance of a member of the teacher education faculty, engage in curriculum development work, and teach courses in teacher preparation programs under the guidance of a faculty member.

A Caveat

The preparation of teachers for the nation's most challenging classrooms is a task that has yet to be successfully accomplished on a large scale. We face any number of challenges in this multi-year initiative—challenges that require considerable negotiation among parties with diverging interests. Most of these challenges require understanding complex human relationships and negotiations around deeply held beliefs. While this work will not be quick or easy, it is crucial for preparing quality teachers for the settings in which they are most in need. ⌘

The CEIC *REVIEW*

Elena Lahr-Vivaz

Editor

This publication is supported in part by the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of CRHDE, and no official endorsement should be inferred.

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